

**ORDINANCE NO. 2010-02-CM**  
**AMENDING TIPPECANOE COUNTY CODE**  
**ADDING NEW CHAPTER 161**  
**WIND ENERGY CONVERSION SYSTEMS**

**BE IT ORDAINED** by the Board of Commissioners of Tippecanoe County, Indiana,  
that the Tippecanoe County Code be amended add a new Chapter 161 reading as follows:

**CHAPTER 161: WIND ENERGY CONVERSION SYSTEMS**

***WIND ENERGY CONVERSION SYSTEMS***

- 161.01 Title
- 161.02 Purpose
- 161.03 Applicability
- 161.04 Authority
- 161.05 Conflict with Other Regulations
- 161.06 Permits and Certificates Required for Construction and Operation
- 161.07 Application Procedure
- 161.08 Application Requirements
- 161.09 Safety Design and Installation Standards
- 161.10 Operation and Maintenance Standards
- 161.11 Decommissioning Plan
- 161.12 Liability Insurance
- 161.13 Pre-construction Requirements
- 161.14 Construction Requirements
- 161.15 Post-construction Requirements
- 161.16 Fees
- 161.17 Right of Entry for Inspections
- 161.18 Stop Order
- 161.19 Violations
- 161.20 Right of Appeal
- 161.21 Remedies
- 161.22 Definitions
- 161.23 Severability

## ***WIND ENERGY CONVERSION SYSTEMS***

### **§ 161.01 TITLE.**

This Chapter, and all ordinances supplemental or amendatory hereto, shall be known as the WIND ENERGY CONVERSION SYSTEM ORDINANCE, may be cited as such, and will be referred to herein as “this Chapter.”

### **§ 161.02 PURPOSE.**

The purpose of this Chapter is to:

- A. Provide minimum standards for the protection of life, limb, health, environment, public safety and welfare, and for the conservation of energy in the design and construction of wind energy systems.
- B. Assure that any development and production of wind-generated electricity in Tippecanoe County is safe and effective;
- C. Facilitate economic opportunities for local residents; and
- D. Promote the supply of wind energy in support of Indiana’s alternative energy sources potential and other such economic development tools.

### **§ 161.03 APPLICABILITY**

A. The provisions of this Chapter govern the construction of Wind Energy Conversion Systems (WECS) and substations that generate electricity to be sold to wholesale or retail markets, or that generate electricity for private use.

B. No applicant shall construct, operate, or locate a Wind Energy Conversion System (WECS) within Tippecanoe County after March 1, 2010 without having fully complied with the provisions of this Chapter and the Tippecanoe County Unified Zoning Ordinance.

C. No final approval of construction for any Wind Energy Conversion Systems (WECS) or structure erected, altered or repaired after March 1, 2010 shall be granted unless such Wind Energy Conversion Systems (WECS) or structure was erected, altered or repaired in compliance with the provisions of this Chapter.

### **§ 161.04 AUTHORITY.**

A. The Tippecanoe County Building Commissioner is hereby authorized and directed to administer and enforce all of the provisions of this chapter. Whenever in this Chapter it is provided that anything must be done to the approval of or subject to the direction of the Building Commissioner or any other officer of the Board of Commissioners, this shall be

construed to give such officer only the discretion (reasonably exercised) of determining whether the rules and standards established by ordinance have been complied with; and no such provision shall be construed as giving any officer discretionary powers as to what such regulation, codes, or standards shall be, or power to require conditions not prescribed by ordinances or to enforce ordinance provisions in an arbitrary or discriminatory manner.

B. The Building Commissioner shall be authorized to issue Wind Energy Conversion Systems (WECS) construction permits and inspection certificates, collect fees, perform inspections, order correction of violations of WECS regulations, and authorize occupancy of WECS and structures situated within the unincorporated areas of the county.

#### **§ 161.05 CONFLICT WITH OTHER REGULATIONS**

Nothing in this Chapter is intended to preempt other applicable state and federal laws or regulations, including compliance with all Federal Aviation Administration rules, regulations and notification requirements. Nor is anything intended to interfere with, abrogate, or annul any other ordinance, rule, or regulation, statute or other provision of law. In the event that any provision of these regulations imposes restrictions different from any other ordinance, rule, regulation, statute, or provision of law, the provisions that are more restrictive or that imposes higher standards shall govern.

#### **§ 161.06 PERMITS AND CERTIFICATES REQUIRED FOR CONSTRUCTION AND OPERATION**

A. No Wind Energy Conversion System (WECS) shall be constructed in the County without first obtaining a WECS Construction Permit in accordance with this Ordinance.

B. No Wind Energy Conversion System shall be operated in the County without a valid WECS Inspection Certificate in accordance with this Ordinance. Each WECS Inspection Certificate shall be valid for a period of one year from the date of issuance. Notwithstanding the terms of the preceding sentence, an Inspection Certificate shall not be considered invalid so long as a timely and generally complete application to renew is pending.

#### **§ 161.07 APPLICATION PROCEDURE FOR PERMITS**

A. Applications for a WECS Construction Permit shall be submitted to the Building Commissioner.

B. Applicant shall provide notice of the intent to build any WECS or WECS Project to all property owners upon whose property the WECS or WECS Project is to be constructed, and all adjoining property owners, to the extent and in the manner required of applicants for a special exception from the Tippecanoe County Board of Zoning Appeals, prior to making application for a WECS Construction Permit. Provision of such notice in connection with an application for such a special exception shall constitute compliance with this Section, and duplicate notice shall not be required.

C. The Building Commissioner shall, with assistance from such staff, consultants, committees or commissions as it deems appropriate, determine whether the application for a WECS Construction Permit is complete and contains all of the materials, information, agreements, deposits and payments required to be submitted with an application under Section 161.08. If an application is not complete, the applicant shall be so advised, and no further action shall be taken by the County until a complete application is received.

D. After the Building Commissioner determines that an application for a WECS Construction Permit is complete, the Building Commissioner shall determine whether the application meets all requirements of this Ordinance. In determining whether the application meets the requirements of this Ordinance, the Building Commissioner may obtain assistance from such staff and consultants as it deems appropriate. The Building Commissioner shall process the complete application as soon as reasonable and feasible, given the complexity of the application, other business facing the County, staff and other resources, questions that arise during the review process, and other matters affecting the time needed to complete the review process.

E. If an application for a WECS Construction Permit is complete and meets all requirements of this Ordinance, and the applicant has paid all fees and costs pursuant to section 161.16 of this Ordinance, the Building Commissioner shall approve the application and issue a WECS Construction Permit for the WECS. If an application does not meet all requirements of this Chapter or the applicant has not paid all fees and costs pursuant to section 161.16, the Building Commissioner may deny the application or approve the application with conditions that will assure compliance with this Chapter. If an application is approved with conditions, a WECS Construction Permit for the WECS shall be issued when all conditions of approval have been satisfied.

F. If a WECS Inspection Certificate has not been issued within thirty (30) months after a WECS Construction Permit for the WECS has been issued, the WECS Construction Permit shall expire.

G. Applications for a WECS Inspection Certificate shall be submitted to the Building Commissioner. The application for a WECS Inspection Certificate shall include a completed WECS Inspection Certificate application form as provided by the Building Commissioner, and shall include such information as may be required by the Building Commissioner to verify continued compliance with all requirements of this Chapter which were in effect when the original WECS Construction Permit for the WECS or WECS Project was issued and payment of the annual Inspection Certificate Fee required by Section 161.16.

H. The Building Commissioner shall determine whether the application for a WECS Inspection Certificate is complete and that the applicant continues to comply with all requirements which were in effect when the original WECS Construction Permit for the WECS or WECS Project was issued. If an application is complete, the applicant continues to comply with all such requirements, and has paid the annual Inspection Certificate Fee, the Building

Commissioner shall promptly approve the application and issue the WECS Inspection Certificate.

## **§ 161.08 APPLICATION REQUIREMENTS**

Permits shall be applied for and reviewed under the procedures established by this Chapter. A complete application shall include a completed application form as provided by the Building Commissioner, which shall include all of the information, documents, plans, deposits and other items required to be submitted with an Application under this Section and Unified Zoning Ordinance 6-2-5.

### **A. Applications for All Wind Energy Conversion Systems Construction Permits**

All applications for WECS Construction Permits shall include the following information:

1. Contact information of project applicant  
The name(s), address(es), and phone number(s) of the applicant(s), as well as a description of the applicant's business structure and overall role in the proposed project.
2. Contact information of current project owner  
The name(s), address(es), and phone number(s) of the owner(s), as well as a description of the owner's business structure and overall role in the proposed project, and including documentation of land ownership or legal control of the property on which the WECS is proposed to be located. The Building Commissioner shall be informed of any changes in ownership.
3. Contact information of project operator  
The name(s), address(es), and phone number(s) of the operator(s), as well as a description of the operator's business structure and overall role in the proposed project.
4. Legal description  
The legal description, address, and general location of the project.
5. Project description  
A WECS Project Description, including information on each wind turbine proposed, including:
  - A. Number of turbines;
  - B. Type;
  - C. Name plate generating capacity;
  - D. Tower height;
  - E. Rotor diameter;

- F. Total height;
- G. Anchor base;
- H. The means of interconnecting with the electrical grid;
- I. The potential equipment manufacturer(s); and
- K. All related accessory structures.
- L. A site plan, drawn at an appropriate scale, showing distances pertaining to all applicable setback requirements and certified by a registered land surveyor.
- M. A unique identification number which shall be affixed to and shall identify each tower, and the GPS coordinates of the location of each tower.

6. Engineering certification

For all WECS except Micro WECS, a registered professional engineer shall certify, as part of the WECS Construction Permit application, that the foundation and tower design of the WECS is within accepted professional standards, given local soil and climate conditions. An engineering analysis of each WECS Tower showing compliance with the applicable regulations and certified by a registered professional engineer shall also be submitted. The analysis shall be accompanied by standard drawings of the wind turbine structure, including the tower, base, and footings.

7. Proof of correspondence and cooperation with wildlife agencies

For all WECS except Micro WECS, for the purposes of preventing harm to migratory birds and in compliance with the Migratory Bird Treaty Act, the applicant shall provide written documentation that he or she is in direct correspondence and cooperation with the U.S. Fish and Wildlife Service and the Indiana Department of Natural Resources, and will comply with the statutes and regulations administered thereby.

8. Fire Prevention and Emergency Response Plan and proof of notice to affected emergency responders.

Each application for all WECS except Micro WECS, shall include a fire prevention and emergency response plan which describes the potential fire and emergency scenarios that may require a response from fire, emergency medical services, police or other emergency responders. The plan shall designate the specific agencies that would respond to potential fire or other emergencies. The fire prevention and emergency response plan shall be developed in cooperation with each such agency, and shall include:

- A. Proof of delivery of written notice of the filing of such application to each such agency
- B. A description of all emergency response training and equipment needed to respond to a fire or other emergency

- C. An assessment of the training and equipment currently available to each such agency
- D. A description of what additional training and equipment may be needed by each of the designated agencies in order to respond to a potential fire or other emergency
- E. The means for providing any such special training or emergency response equipment needed to the designated agencies at applicant's cost.

9. **Zoning Compliance**

Evidence (i) of final, non-appealable approval of a special exception by the Tippecanoe County Board of Zoning Appeals for any Commercial WECS and the issuance of an improvement location permit therefor, or (ii) that a Non-Commercial WECS or Micro WECS is permitted as an accessory use under the Tippecanoe County Uniform Zoning Ordinance and issuance of an improvement location permit therefor.

10. Any other item reasonably requested by the Building Commissioner

**B. Applications for Non-commercial Wind Energy Conversion Systems Construction Permits.**

In addition to the application requirements listed in Section 161.08A, applications for Non-commercial WECS Construction Permits shall also include the following information:

- 1. **Statement of Federal Aviation Administration compliance**  
A copy of applicant's Federal Aviation Administration permit application and a statement of compliance with all applicable Federal Aviation Administration rules and regulations, including any necessary approvals for installations within close proximity to an airport.
- 2. **Utility notification**  
No Non-commercial WECS shall be installed until evidence has been given that the local utility company has been informed of the customer's intent to install an interconnected customer-owned generator. Off-grid systems shall be exempt from this requirement.
- 3. **Compliance with National Electrical Code**  
A line drawing of the electrical components in sufficient detail to allow for a determination that the manner of installation conforms to the National Electrical Code. This information is frequently supplied by the manufacturer.
- 4. **Pre-construction Sound Measurements**  
A pre-construction noise study meeting the requirements of Section

161.08.C.3, approved by a qualified independent acoustical consultant selected by the Building Commissioner.

5. Shadow Flicker Assessment and Requirements  
A shadow flicker assessment model and plan meeting the requirements of Section 161.08.C.14.

**C. Applications for Commercial Wind Energy Conversion Systems**

In addition to the application requirements listed in Sections 161.08.A, applications for Commercial WECS shall also include the following information:

1. Site plan  
Applications for Commercial WECS shall include a site plan with distances drawn to an appropriate scale illustrating the following:
  - A. Property lines, including identification of adjoining properties;
  - B. The latitude and longitude of each individual WECS Tower, along with individual identification of each WECS Tower;
  - C. Dimensional representation of the structural components of the WECS Tower construction including the base and footings;
  - D. WECS access roads;
  - E. Substations;
  - F. Electrical cabling;
  - G. Ancillary equipment;
  - H. Primary structures within one quarter (1/4) mile of all proposed WECS Towers;
  - G. Distances from each individual WECS Tower to each setback requirement;
  - I. Location of all public roads which abut, or traverse the proposed site;
  - J. The location of all above-ground utility lines within a distance of two (2) times the height of any proposed WECS structure;
  - K. The location of any historic or heritage sites as recognized by the Division of Historic Preservation and Archeology of the Indiana Department of Natural Resources, within one (1) mile of a proposed WECS Tower; and
  - L. The location of any wetlands based upon a delineation plan prepared in accordance with the applicable U.S. Army Corps of Engineers requirements and guidelines, within one (1) mile of a proposed WECS Tower.
  - M. Location of all regulated drains which abut or traverse the proposed site.
2. Topographic map



A topographical map of the property and the surrounding area, using standards consistent with the most recent Tippecanoe County GIS Map, including any other WECS Tower within a ten (10) rotor distance, but no less than a one quarter (1/4) mile radius from the proposed project site, with contours of not more than two (2) foot intervals.

3. Pre-construction Sound Measurements

A. The applicant shall submit a pre-construction noise study approved by a Qualified Independent Acoustical Consultant selected by the Building Commissioner, which provides sufficient information with respect to each turbine location to verify that the WECS Project will meet the requirements of Section 161.09 of this Chapter, including without limitation:

1. The make and model of the turbines
2. Sound Power Levels (Lw) for each turbine for each one-third octave band from 6.3 Hz up through 10,000 Hz
3. A preconstruction noise study for each proposed Wind Turbine location (ambient noise profile) showing background dBA and dBC sound levels (L90 (10 min)) over one or more valid ten (10) minute continuous measurement periods for each turbine location, nearest dwelling and nearest non-participating owner's property line. The ambient noise levels shall be the L90A sound descriptor measured during a preconstruction noise study during the quietest time of night (10 pm until 4am).
4. A projection showing the expected dBA and dBC sound levels computed using the one-third octave band sound power levels (Lw) with appropriate corrections for modeling and measurement accuracy tolerances and directional patterns of the WECS for all areas within and to one (1) mile from the project boundary for the wind speed, direction and operating mode that would result in the worst case WECS sound emissions. The projection may be by means of computer model but shall include a description of all assumptions made in the model's construction and algorithms. If the model does not consider the effects of wind direction, geography of the terrain, and/or the effects of reinforcement from coherent sounds or tones from the turbines these should be identified and other means used to adjust the model's output to account for these factors. These

results may be displayed as a contour map of the predicted levels, but should also include a table showing the predicted levels at noise-sensitive receptor sites and residences within the model's boundaries. The predicted values must include dBA and dBC values but shall also include un-weighted octave band sound pressure levels from 8 Hz to 10k Hz in data tables.

- B. The Building Commissioner will refer the applicant's information and sound studies to a Qualified Independent Acoustical Consultant for review and a determination, at Applicant's cost, whether the proposed WECS will, based on pre-construction studies and sound modeling, comply with the sound limits set forth in this Ordinance.
- 4. Location of all known WECS Towers within one (1) mile of the proposed WECS Tower, including a description of the potential impacts on said WECS Tower and wind resources on adjacent properties.
- 5. Communications Study  
The applicant shall complete a communications study prior to construction verifying that the WECS Project will not interfere with any public or public serving utility microwave transmissions, and including any actions which may be required to mitigate interference with electromagnetic communications, such as radio, telephone, microwaves, or television signals caused by any WECS Project.
- 6. Statement of Federal Aviation Administration compliance  
A copy of applicant's Federal Aviation Administration permit application and a statement of compliance with all applicable Federal Aviation Administration rules and regulations, including any necessary approvals for installations within close proximity to an airport.
- 7. Compliance with National Electrical Code  
A line drawing of the electrical components in sufficient detail to allow for a determination that the manner of installation conforms to the National Electrical Code. This information is frequently supplied by the manufacturer.
- 8. Decommissioning plan  
A fully executed copy of the decommissioning plan in accordance with Section 161.11 of this Chapter and approved by the County Commissioners.
- 9. Economic Development Agreement

A fully executed copy of an Economic Development Agreement prepared in conjunction with the Tippecanoe County Economic Development Commission and approved by the County Commissioners.

10. Road Use and Maintenance Agreement  
A fully executed Road Use and Maintenance Agreement prepared in conjunction with the Executive Director of the Tippecanoe County Highway Department and approved by the County Commissioners.
11. Drainage Agreement  
A fully executed Drainage Agreement prepared in conjunction with the Tippecanoe County Surveyor and approved by the Tippecanoe County Drainage Board. The Drainage Agreement must prescribe or reference provisions to address crop and field tile damages and include verification of compliance with the Tippecanoe County Stormwater Control Ordinance and Indiana Department of Environmental Management Rule 5.
12. Erosion control plan  
A fully executed Erosion Control Plan developed in consultation with the Tippecanoe County Surveyor, which shall comply with any storm water quality management regulations plan adopted by the applicable jurisdiction.
13. Utility plan  
A utility plan drawn to the same scale as the site plan illustrating the location of all underground utility lines associated with the total WECS Project.
14. Shadow Flicker Assessment and Requirements  
An application for a Commercial or Non-Commercial WECS Construction Permit shall include a detailed shadow flicker assessment model and plan prepared by a registered professional regularly engaged in this type of work with not less than three years experience, which contains the following information and meets the following requirements:
  - A. The study area will examine areas where shadow flicker will occur within a one mile radius of each wind turbine.
  - B. The study will include:
    1. The location of each turbine.
    2. The location of each receptor (occupied structure, structure permitted for construction, or roadway) where the WECS may cause shadow flicker to occur
    3. Existing topography (elevation contours and vegetation)

4. Rotor diameter and hub height
  5. Joint wind speed and direction distribution (wind rose table)
  6. Hours of sunshine (long term monthly references)
- C. The study may be prepared by use of current aerial photography, GIS, and topographical maps. A site visit by the preparer is required to identify receptors and verify the existing conditions.
  - D. The study shall calculate the locations and durations of shadow flicker caused by the proposed WECS within the study area, and model shall clearly indicate the duration of shadow flicker at each receptor and across the entire study area showing the total number of hours per year anticipated.
  - E. Wind Turbines shall be sited such that shadow flicker will not fall on a receptor, except that shadow flicker expected to fall on a roadway or a dwelling may shall be allowed if the flicker will not exceed 40 hours per year, or the number of hours that the owner of such roadway or dwelling has agreed to in writing, at any one receptor measured as the sum of those times during which shadow flicker occurs during any calendar year.
  - F. Problem zones where shadow flicker will interfere with existing and future receptors shall be identified, and measures to mitigate problems shall be described, including but not limited to siting changes, operational procedures, grading or landscaping.

**D. Applications for all WECS Meteorological Towers**

Applications for all WECS Meteorological Towers shall include the following information:

1. A copy of the agreement where landowner has authorized the placement of a WECS Meteorological Tower on their property.
2. Preliminary site plan  
A preliminary site plan with distances drawn to an appropriate scale including the following:
  - A. Property lines, including identification of adjoining properties;
  - B. The latitude and longitude of each individual WECS Meteorological Tower;
  - C. Dimensional representation of the structural components of the tower construction, including the base and footings;
  - D. Prior to implementation of the existing procedures for the

resolution of such default(s), the appropriate County body shall first provide written notice to the owner and/or Electrical cabling;

- E. Ancillary equipment;
- F. Required setback lines;
- G. Location of all public roads which abut, or traverse the proposed site;
- H. The location of all above-ground utility lines within a distance of 2 times the height of any proposed tower;
- I. The location of all underground utility lines;
- J. Location of all regulated drains which abut or traverse the proposed site; and
- K. Any other items reasonably requested by the Building Commissioner.

**E. Aggregated WECS Project applications**

A single Application may be filed for a WECS Project located on multiple parcels.

**F. Fees**

- 1. Commercial WECS, Non-commercial WECS, Micro WECS, and WECS Meteorological Towers shall be assessed the fees prescribed in Tippecanoe County Code Chapter 151.
- 2. Aggregated WECS Projects  
Aggregated WECS Projects will be assessed separate fees prescribed in Tippecanoe County Code Chapter 151 for each construction phase within a single project.
- 3. Buildings and other structures associated with the construction and operation of WECS shall comply with the Unified Zoning Ordinance, and shall be assessed the building permit and improvement location permit fees prescribed in Tippecanoe County Code Chapter 151 and Unified Zoning Ordinance 4-11-11.

**G. Permits**

- 1. Applications for construction of Commercial WECS, Non-commercial WECS, Micro WECS, and WECS Meteorological Towers, and any accessory buildings shall include:
  - A. All application requirements as stated in Section 161.08, APPLICATION REQUIREMENTS, before any WECS Construction Permit is issued.
  - B. A copy of all fully executed agreements or memorandums of agreement, if applicable, signed by Participating Landowners

authorizing the placement of the identified WECS Towers on the landowner's property.

- C. A copy of all fully executed setback or other agreements, if applicable, signed by Nonparticipating Landowners for adjoining properties.

2. **Aggregated WECS Projects**

For aggregated projects, a single WECS Construction Permit and Inspection Certificate may be issued, which includes all WECS Towers and WECS Meteorological Towers to be constructed in one construction phase within an aggregated WECS project.

**§ 161.09 SAFETY DESIGN AND INSTALLATION STANDARDS**

**A. Equipment type**

- 1. **Turbines**  
All turbines shall be constructed of commercially available equipment.
- 2. **Meteorological Towers**  
All WECS Meteorological Towers may be guyed.
- 3. **Experimental, or proto-type equipment.**  
Experimental or proto-type equipment still in testing which does not fully comply with industry standards, must be approved by Board of Commissioners.

**B. Industry standards and other regulations.**

All WECS shall conform to applicable industry standards, as well as all local, state and federal regulations. An applicant shall submit certificate(s) of design compliance that wind turbine manufacturers have obtained from Underwriters Laboratories, Det Norske Veritas, Germanishcher Lloyd Wind Energie, or an equivalent third party.

**C. Controls and brakes.**

- 1. **Braking system**  
All WECS Towers shall be equipped with a redundant (both manual and automatic) braking system. This includes both aerodynamic over speed controls (including variable pitch, tip, and other similar systems) and mechanical brakes. Stall regulation shall not be considered a sufficient braking system for over speed protection.
- 2. **Operation mode**

All mechanical brakes shall be operated in a fail-safe mode.

**D. Electrical components**

1. Standards All electrical components of all WECS shall conform to applicable local, state and national codes, and any relevant national and international standards.
2. Collection cables All electrical collection cables between each WECS Tower shall be located in accordance with the provisions of the Tippecanoe County Unified Zoning Ordinance.

**E. Transmission lines**

All transmission lines that are buried should be at a depth consistent with or greater than local utility and telecommunication underground lines standards or as negotiated with the land owner or the land owner's designee until the same reach the property line or a substation adjacent to the property line.

**F. Color and finish**

In addition to all applicable Federal Aviation Administration requirements, the following shall also apply:

1. Wind turbines and towers  
All wind turbines and towers that are part of a WECS shall be white, grey, or another neutral color.
2. Blades  
All blades shall be white, grey, or another neutral color. Blades may be black in order to facilitate deicing.
3. Finishes  
Finishes shall be non-reflective.
4. Exceptions  
Exception may be made for all WECS Meteorological Towers, where concerns exist relative to aerial spray applicators.

**G. Warnings**

1. Commercial WECS  
The following notices shall be posted for all Commercial WECS:
  - A. A sign or signs shall be posted on the pad-mounted transformer and the Substation(s) warning of high voltage.
  - B. Private roads providing access to Commercial WECS shall have posted an Emergency-911 address road sign, which address shall

be issued by the Area Plan Commission.

- C. Guy wires and anchor points For all guyed towers, one of the following warning mechanisms shall be used for each anchor point:

1. Visible or reflective objects Visible and reflective objects, such as flags, plastic sleeves, reflectors, or tape placed on the anchor points of guy wires and along the innermost guy wires up to eight (8) feet above the ground.
2. Visible Fencing Visible fencing not less than six (6) feet in height installed around anchor points of guy wires.

2. Non-commercial WECS

The following notices shall be clearly visible on all Non-commercial WECS and accessory facilities:

- A. "No Trespassing" signs shall be attached to any perimeter fence.
- B. "Danger" signs shall be posted at the height of five (5) feet on WECS Towers and accessory structures.
- C. A sign shall be posted on the WECS Tower showing an emergency telephone number.
- D. The manual electrical and/or overspeed shutdown disconnect switch(es) shall be clearly labeled.

3. Meteorological Towers

Consideration shall be given to paint aviation warnings as required by the Federal Aviation Administration on all WECS Meteorological Towers.

H. **Climb prevention**

All Commercial WECS Tower designs shall include features to deter climbing or be protected by anti-climbing devices such as:

1. Fences with locking portals at least six (6) feet in height; or
2. Anti-climbing devices twelve (12) feet vertically from the base of the WECS Tower; or
3. Locked WECS Tower doors.

I. **Blade clearance**

The minimum distance between the ground and any protruding blades(s) utilized on all Commercial or Non-commercial WECS Towers shall be thirty (30) feet, as measured at the lowest point of the arc of the blades.

J. **Lighting**

1. Intensity and frequency All lighting, including lighting intensity and frequency of strobe, shall comply with requirements established by Federal Aviation Administration permits and regulations and be in conformity with the Tippecanoe County Unified Zoning Ordinance.



2. **Shielding** Except with respect to lighting required by the Federal Aviation Administration, lighting may require shielding so that no glare extends substantially beyond any WECS Tower.

**K. Materials handling, storage and disposal**

1. **Solid wastes**  
All solid wastes whether generated from supplies, equipment, parts, packaging, operation or maintenance of the WECS, including old parts and equipment related to the construction, operation and/or maintenance of the WECS shall be removed from the site promptly and disposed of in accordance with all federal, state, and local laws.
2. **Hazardous materials**  
All hazardous materials or waste related to the construction, operation and/or maintenance of any WECS shall be handled, stored, transported and disposed of in accordance with all applicable local, state and federal laws.

**L. Other Applicable Standards**

1. **Guyed wire anchors**  
No guyed wire anchors shall be allowed within any required public road right-of-way.
2. **Sewer and water**  
All WECS Projects shall comply with the existing septic and well regulations as required by the Tippecanoe County Health Department and/or the State of Indiana Department of Public Health.
3. **Noise and vibration**  
The noise level measured when fully operating of all WECS shall not exceed:
  - A. the lessor of forty-five (45) dBA or 5 dBA above ambient pre-construction noise levels when measured from the nearest dwelling whose owner has not agreed in writing to a higher level;
  - B. the lessor of fifty-five (55) dBA or 5 dBA above ambient pre-construction noise levels when measured from the nearest non-participating property owner parcel line whose owner has not agreed in writing to a higher level;
4. **Utility interconnection**

The WECS, if interconnected to a utility system, shall meet the requirements for interconnection and operate as prescribed by the applicable regulations of the electrical utility, as amended from time to time.

5. **Signage**

All signs pertaining to a WECS Project must comply with Tippecanoe County Unified Zoning Ordinance Sign Standards, with the following exceptions:

- A. Warning Signs required by this Chapter
- B. Height. No free-standing sign shall exceed eight (8) feet in height.
- C. Manufacturer's or owner's company name and/or logo. The manufacturers or owner's company name and/or logo may be placed upon the compartment containing the electrical equipment.
- D. Development signs. An identification sign relating to the WECS Project development may be located on each side of the total WECS Project area, provided that there are no more than four (4) signs located on any one WECS Project or Aggregated WECS Project site and no more than one (1) per road frontage.
- E. Other signs and logos. No other advertising signs or logos shall be placed or painted on any structure or facility that is part of the WECS Project.

6. **Collection lines**

All communications and collection lines installed as part of any WECS shall be buried underground.

7. **Other appurtenances**

No appurtenances other than those associated with the WECS construction, operations, maintenance, decommissioning/removal, and permit requirements shall be connected to any WECS Tower.

**§ 161.10 OPERATION AND MAINTENANCE STANDARDS**

A. **Physical modifications**

In general, any physical modification to any WECS that alters the mechanical load, mechanical load path, or major electrical components shall require re-application for a construction permit or Inspection Certificate. Like-kind replacements in the same location shall not require re-application. Therefore, prior to making any such physical modification, the owner or operator shall confer with the Building Commissioner and Area Plan Staff to determine whether the physical modification requires re-application or a new special exception.

B. **Interference**

Applicant, owner and/or operator shall take such actions as may be required to

mitigate interference with electromagnetic communications, such as radio, telephone, microwaves, or television signals caused by any WECS. In addition, the applicant, owner, and/or operator shall comply with the following:

1. If, after construction of the WECS, the owner or operator receives a written complaint related to interference with the broadcast of residential television, telecommunication, communication or microwave transmissions, the owner or operator shall take reasonable steps to mitigate said interference. Interference with private telecommunications systems such as GPS shall be between the company and the complainant.
2. **Failure to remedy a complaint**  
If the Building Commissioner determines that an owner or operator has failed to remedy verified interference with the broadcast of residential television, telecommunication, communication or microwave transmissions within ninety (90) days after owner or operator received a written complaint related thereto, the Building Commissioner may take appropriate action to rescind the owner's or operator's WECS Inspection Certificate. This does not apply to interference with private telecommunications systems.

**C Complaint Resolution**

1. If, after construction of the WECS, the owner or operator receives a written complaint from a person aggrieved by an alleged failure of the owner or operator to comply with the Safety Design and Installation Standards of this Chapter, the owner or operator shall take reasonable steps to remedy such complaint.
2. **Failure to remedy a complaint**  
If the Building Commissioner determines that an owner or operator has failed to take reasonable steps to remedy a written complaint within ninety (90) days after receipt thereof, the Building Commissioner may take appropriate action to rescind the owner's or operator's WECS Inspection Certificate.

**§ 161.11 DECOMMISSIONING PLAN**

Prior to receiving a WECS Construction Permit or Improvement Location Permit under this Ordinance and the Unified Zoning Ordinance, the applicant, owner and/or operator shall formulate a decommissioning plan approved by the Board of Commissioners providing for the method and payment of the anticipated cost of removing a WECS at the end of its serviceable life or upon its becoming a discontinued or abandoned use to ensure that the WECS is properly decommissioned.

**A. Content**

A decommissioning plan shall include, at a minimum, the following:

1. Assurance  
Written assurance that the WECS will be properly decommissioned upon the expiration of its serviceable life or in the event of its discontinuance or abandonment.
2. Cost estimates  
For all WECS except Micro WECS, an estimate of the costs of decommissioning and removing the WECS upon the expiration of its useful life, or in the event of its discontinuance or abandonment. The cost estimates shall be made by a professional engineer, contractor, or other person with expertise or experience in decommissioning and removal of WECS.
3. Financial assurance  
For all WECS except Micro WECS, applicant will provide financial assurance in an amount not less than the estimated cost of decommissioning and removing the WECS, in the form of a bond, letter of credit or other security acceptable to the Board of Commissioners, for the cost of decommissioning each WECS Tower and related improvements constructed under the permit. Said security will be released when each WECS Tower is properly decommissioned as determined by the Building Commissioner.
4. Abandonment  
Verification under penalties for perjury, that all easements and/or leases for the WECS contain terms that provide financial assurances to the property owners to ensure that the WECS are properly decommissioned within one (1) year of the expiration of its serviceable life or in the event of its discontinuance or abandonment.

**B. Discontinuation and abandonment**

1. Discontinuation  
All WECS shall be considered abandoned and a discontinued use after one (1) year without energy production, unless a plan is developed and approved by the Building Commissioner outlining the steps and schedule for returning the WECS to service.
2. Removal  
An applicant's obligations shall include removal of all physical material pertaining to the project improvements to no less than a depth of four (4)

feet below ground level within three hundred sixty-five (365) days of the discontinuation or abandonment of the WECS or WECS Project, and restoration of the project area to as near as practicable the condition of the site immediately before construction of such improvements. Removal obligations shall be completed by the owner or by Tippecanoe County at the owner's expense.

3. **Written notices**

Prior to implementing procedures to resolve any alleged failure to comply with the Decommissioning Plan, the appropriate County body shall first provide written notice to the owner and/or operator, setting forth the alleged default(s). Such written notice shall provide the owner and/or operator a reasonable time period, not to exceed sixty (60) days, to resolve the alleged default(s).

4. **Costs incurred by the County**

If the County removes a WECS Tower and appurtenant facilities, it may sell the salvage to defray the costs of removal. Each permittee, by virtue of the issuance of its construction permit or Inspection Certificate grants a license to Tippecanoe County to enter the property and to remove all WECS Towers and appurtenant facilities pursuant to the terms of its approved decommissioning plan.

C. **Declaration of public nuisance**

Any WECS, structure or portion thereof declared to be unsafe by the Tippecanoe County Building Inspector by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, damage or abandonment is hereby declared to be a public nuisance and shall be abated by repair, rehabilitation, demolition or removal in accordance with the approved Decommissioning Plan

## **§ 161.12      LIABILITY INSURANCE**

For all WECS except Micro WECS, the owner or operator of any WECS shall maintain a current general liability policy covering bodily injury and property damage naming Tippecanoe County as an additional insured with dollar amount limits of not less than \$5,000,000 per occurrence, in the aggregate, and a deductible which is suitable to the County.

## **§ 161.13      PRE-CONSTRUCTION REQUIRMENTS**

In addition to complying with the approved Road Use and Maintenance Agreement, an applicant, owner, or operator proposing to use any county road(s), for the purpose of transporting any component of a Commercial WECS Project and/or equipment for construction, operation or maintenance of a Commercial WECS Project, shall comply with the following pre-construction

requirements.

- A. Identification of roads and services Identify all roads and services, to the extent that any proposed routes that will be used for construction and maintenance purposes shall be identified. If the route includes a public road, it shall be approved by the Executive Director of the Tippecanoe County Highway Department upon a determination that use of the proposed route will not be inconsistent with public health, safety or general welfare.
- B. Pre-construction survey The applicant shall conduct a pre-construction baseline survey acceptable to the Executive Director of the Tippecanoe County Highway Department to determine existing road conditions for assessing potential future damage. The survey shall include photographs, or video, or a combination thereof, and a written agreement to document the condition of the public facility.

#### **§ 161.14 CONSTRUCTION REQUIREMENTS**

During construction, the applicant shall demonstrate that the following requirements are being met:

- A. **Dust control**  
Dust control measures shall be required by the County during construction of a Commercial WECS Project in accordance with the Road use and Maintenance Agreement developed in conjunction with the Executive Director of the Tippecanoe County Highway Department and approved by the County Commissioners.
- B. **Drainage**  
Applicant shall comply with the Tippecanoe County Stormwater Management Ordinance, including storm water best management practices, and promptly repair any County-owned regulated drains, drainage tiles or open ditches or privately owned drainage tiles or private drains which are damaged during the course of construction, and remove any obstructions to natural surface drainage which occurs during construction, all in accordance with the approved Drainage Agreement developed in conjunction with the Tippecanoe County Surveyor and the Tippecanoe County Drainage Board.
- C. **Road Maintenance**  
Applicant shall promptly repair any County roads or related appurtenances, including bridges, culverts, signage, or other road fixtures, which are damaged during the course of construction, all in accordance with the Road Use and Maintenance Agreement developed in conjunction with the Executive Director of the Tippecanoe County Highway Department and approved by the County Commissioners.

## **§ 161.15 POST-CONSTRUCTION REQUIREMENTS**

Post-construction, the applicant shall comply with the following provisions:

### **A. Road Repairs**

Any road damage caused by the construction of project equipment, the installation of the same, or the removal of the same, shall be repaired as per the Road Use and Maintenance Agreement approved by the County Commissioners.

1. The Executive Director of the Tippecanoe County Highway Department may choose to require either remediation of road repairs upon completion of the project or is authorized to collect fees for oversized load permits.
2. A corporate surety bond in an amount to be fixed by a professional engineer may be required by the Executive Director of the Tippecanoe County Highway Department to insure the county that future repairs are completed to the satisfaction of the Board of Commissioners. The cost of bonding shall be paid by the applicant.

### **B. As-Built Plans Requirement**

Upon completion of all development, the applicant, owner, or operator shall submit to the Building Commissioner a complete set of As-built Construction Plans showing the exact measurements of the location of all utilities and structures erected during the development, in such quantities as shall reasonably be required for review by all appropriate County reviewing agencies. After each reviewing agency has reviewed and accepted the as-built drawings, and Building Commissioner is satisfied that the measurements are substantially the same as indicated on the originally approved final plan(s), the Building Commissioner shall approve, date and sign said As-built Construction Plans for the project, which the applicant, owner, or operator shall then record in the office of the Tippecanoe County Recorder.

### **C. Post-construction Sound Measurements**

1. Within twelve months after issuance of a WECS Inspection Certificate, and annually thereafter, the applicant, owner or operator of all WECS except Micro WECS shall submit a post-construction noise profile study including sufficient information and sound modeling to verify that the WECS Project continues to meet the requirements of Section 161.09 of this Chapter.
2. The post-construction noise level measurements shall be taken both with all WECS' s running and with all WECS' s off. At the discretion of the Building Commissioner, the preconstruction background sound levels can

be substituted for the "all WECS off" tests if a random sampling of 10% of the pre-construction study sites shows that background conditions have not changed more than +1-5 dB (dBA and dBC) measured under the preconstruction nighttime meteorological conditions.

3. Post-construction noise levels shall be assessed using the same nighttime and wind/weather conditions required in Section 161.08.C.3. Turbine operating sound emissions shall represent worst case sound emissions for stable nighttime conditions with low winds at ground level and winds sufficient for full operating capacity at the hub.
4. Test sites are to be located at each turbine location, nearest dwelling and along the nearest non-participating owner's property line. The post-construction measurements shall be submitted to the Building Commissioner using the same format as used for the preconstruction noise profile studies.

**D. Change in ownership**

It is the responsibility of the owner or operator listed in the application to inform the Building Commissioner of all changes in ownership and operation during the life of the project, including the sale or transfer of ownership or operation.

**§ 161.16 FEES.**

**A. Application Fees.**

Wind Energy Conversion System (WECS) applicants shall pay all costs associated with the review and processing of applications for WECS Construction Permits and WECS Inspection Certificates by Tippecanoe County, including without limitation the Board of Commissioners, Building Commissioner, Economic Development Commission, Surveyor and Area Plan Commission. Applicants shall submit a minimum Application Fee with the application in the amount set forth in the Tippecanoe County Building Code Fee Schedule, Tippecanoe County Code Section 151A.04.

**B. Development Fees.**

A one time or periodic fee and a requirement to provide public works or services may be imposed as a condition of a Commercial WECS Permit. Such fees shall be included in the Economic Development, Drainage, and Road Use and Maintenance Agreements required by Section 161.13, and must be related to the public need created by the wind energy development. Such fees may be used for, but are not limited to, providing and maintaining road and drainage improvements and facilities required by the wind energy development and establishing and operating a monitoring system to assure compliance with the provisions of this Chapter.



**§ 161.17 RIGHT OF ENTRY FOR INSPECTIONS.**

Upon presentation of proper credentials, the Building Commissioner, the Tippecanoe County Surveyor and the Executive Director of the Tippecanoe County Highway Department or their duly authorized representatives may enter at reasonable times any wind energy system, structure or premises in the county to perform inspections to assure compliance with all requirements of this Chapter, the Unified Zoning Ordinance and any conditions of any grant of a special exception.

**§ 161.18 STOP ORDER.**

Whenever work is being done contrary to the provisions of this Chapter, the Building Commissioner may order the work stopped by notice in writing, served on any person engaged in the doing or causing such work to be done, and any such persons shall forthwith stop such work until authorized by the Building Commissioner to proceed with the work.

**§ 161.19 VIOLATIONS.**

It shall be unlawful for any person, firm or corporation, whether as owner, lessee, sub-lessee, or occupant, to erect, construct, enlarge, alter, repair, improve, remove, convert, demolish, equip, use, occupy or maintain any wind energy conversion system or structure, in the county or cause or permit the same to be done, contrary to or in violation of the provisions of this Chapter. Notwithstanding the foregoing, no WECS Inspection Certificate shall be revoked without 15 days prior written notice to applicant and applicant's failure to cure within thirty (30) days thereafter.

**§ 161.20 RIGHT OF APPEAL.**

All persons aggrieved by a decision of the Building Commissioner shall have the right to appeal the decision to the Board of County Commissioners within thirty (30) days after the decision. Any decision of the Board of County Commissioners pursuant to the foregoing may be appealed in accordance with IC 32-2-2-27.

**§ 161.21 REMEDIES.**

The Building Commissioner shall, in the name of the Board of Commissioners of Tippecanoe County, bring actions in the Tippecanoe Circuit Court, for mandatory and injunctive relief in the enforcement of and to secure compliance with any provision of this Chapter or any order or orders made by the Building Commissioner, and any such action for mandatory or injunctive relief may be joined with an action to recover the penalties provided for in this Chapter.

**§ 161.22 DEFINITIONS**

- A. **AGGREGATED WECS PROJECT(S):** a WECS located on two or more parcels or properties as specified in an application for a WECS Construction or Inspection Certificate pursuant to this Chapter.
- B. **APPLICANT:** the entity or person who submits to the County, an application for the construction or operation of any WECS or Substation or thereafter operates or owns a WECS.
- C. **FINANCIAL ASSURANCE:** reasonable assurance from a creditworthy party, examples of which include a surety bond, trust instrument, cash escrow, or irrevocable letter of credit or combinations thereof.
- D. **OPERATOR:** the entity responsible for the day-to-day operation and maintenance of a WECS, including any third party subcontractors.
- E. **OWNER:** the person, firm, corporation, trust or other entity or entities with an equity interest in the WECS(s), including their respective successors and assigns. Owner does not mean (i) the property owner from whom land is leased for locating the WECS (unless the property owner has an equity interest in the WECS); or (ii) any person holding a security interest in the WECS(s) solely to secure an extension of credit, or a person foreclosing on such security interest provided that such person sells the WECS(s) within one year of such foreclosure.
- F. **PARTICIPATING LANDOWNER:** A landowner upon whose land a WECS is constructed, or who has contractually granted rights to an Owner or Developer with respect to a WECS.
- G. **PROFESSIONAL ENGINEER:** a qualified individual who is licensed or registered as a professional engineer in any state in the United States.
- H. **PRIMARY STRUCTURE:** for each property, the structure that one (1) or more persons occupy the majority of time on that property for either business or personal reasons. Primary Structure includes structures such as residences, commercial buildings, hospitals, and day care facilities. Primary Structure excludes structures such as hunting sheds, storage sheds, pool houses, unattached garages and barns.
- I. **QUALIFIED INDEPENDENT ACOUSTICAL CONSULTANT:** a consultant with demonstrated competence in the specialty of community noise testing and Full Membership in the Institute of Noise Control Engineering of the USA (INCE-USA).
- J. **SHADOW FLICKER:** the condition which occurs when the blades of a Wind Turbine pass between the sun and an observer, casting a readily observable, moving shadow on the observer and his or her immediate environment.

- K. SHADOW FLICKER RECEPTOR: any occupied structure, structure permitted for construction, or roadway where the WECS may cause shadow flicker to occur.
- L. SUBSTATION: the apparatus that connects the electrical collection system of the WECS(s) and increases the voltage for connection with the utility's transmission lines.
- M. SWEPT AREA: the diameter of the least circle encompassing all blades for a WECS.
- N. SWITCHING STATION: an apparatus or structure in the system similar to a substation but not necessarily increasing voltage into the grid.
- O. WECS CONSTRUCTION PERMIT: the Permit issued by the Building Commissioner for construction of a Wind Energy Conversion System.
- P. WECS INSPECTION CERTIFICATE: the Certificate issued by the Building Commissioner to verify continued compliance with all requirements of this Chapter which were in effect when the original WECS Construction Permit for the WECS or WECS Project was issued
- Q. WECS METEOROLOGICAL TOWER: a tower, the primary or predominant purpose of which is to provide meteorological information in connection with the siting or operation of a WECS.
- R. WECS PROJECT: two or more WECS on a single property or aggregate properties as specified in an application for a WECS Construction or Operating Permit pursuant to this Chapter.
- S. WECS TOWER: the monopole, freestanding or guyed structure that supports the energy capture, conversion, storage or transfer components of a WECS.
- T. WECS TOWER HEIGHT or TOTAL HEIGHT: the distance measured from the ground level at the base of the WECS Tower to the highest extension of the blades or rotor.
- U. "WECS" WIND ENERGY CONVERSION SYSTEM: all necessary devices that together convert wind energy into electricity and store or deliver that electricity to a utility's transmission lines, including but not limited to the rotor, nacelle, generator, WECS Tower, electrical components, WECS foundation, transformer, and electrical cabling from the WECS Tower, Substation, wind farm collection system, WECS Meteorological towers, communications facilities and other required facilities and equipment.

1. COMMERCIAL WECS or LARGE WIND SYSTEM: a Wind Energy Conversion System which has a nameplate capacity (manufacturer's rating) of more than 50 kilowatts per wind tower, or a total height of more than 140', or a swept area of more than 40'.
2. NON-COMMERCIAL WECS or SMALL WIND SYSTEM: a Wind Energy Conversion System which has a nameplate capacity (manufacturer's rating) of more than 10 kilowatts per wind tower and less than or equal to 50 kilowatts per windtower, and a total height of more than 80' but less than or equal to 140', and a swept area of 40' or less.
3. MICRO WECS: a Wind Energy Conversion System designed to provide electric power to a home or other local site for use by the owner, which has a nameplate capacity (manufacturer's rating) less than or equal to 10 kilowatts per windtower and a total height of 80' or less, or if building-mounted, projects no more than 15' above the highest point of the roof.

**§ 161.23 SEVERABILITY**

The provisions of this ordinance are severable, and the invalidity of any section, subdivision, paragraph, or other part of this ordinance shall not affect the validity or effectiveness of the remainder of the ordinance.

This Ordinance shall be in full force and effect immediately upon its passage and publication.

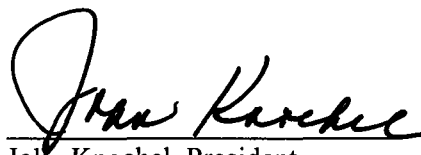
Presented to the Board of Commissioners of Tippecanoe County, Indiana, and approved on first reading this 15<sup>th</sup> day of March, 2010, by the following vote:

BOARD OF COMMISSIONERS OF  
TIPPECANOE COUNTY

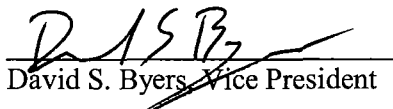
VOTE

YES

YES

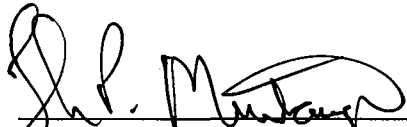


John Knochel, President

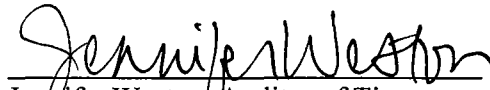


David S. Byers, Vice President

YES

  
Thomas P. Murtaugh, Member

ATTEST:

  
Jennifer Weston, Auditor of Tippecanoe County

Presented to the Board of Commissioners of Tippecanoe County, Indiana, and approved on second reading this 5<sup>th</sup> day of April, 2010, by the following vote:

BOARD OF COMMISSIONERS OF  
TIPPECANOE COUNTY

VOTE

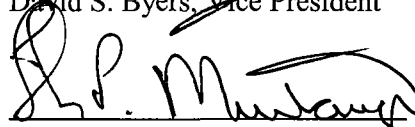
YES

  
John Knochel, President


YES

  
David S. Byers, Vice President

YES

  
Thomas P. Murtaugh, Member

ATTEST:

  
Jennifer Weston, Auditor of  
Tippecanoe County